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# SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

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Communications will be welcomed from any quarter. Abstracts of scientific papers are solicited, and one hundred copies of the issue containing such will be mailed the author on request in advance. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

### THE APPLICATIONS OF HYPNOTISM.

At the present time, when even medical experts hold themselves in an attitude of indecision towards hypnotism, it is not surprising that the laity are at a loss to reconcile the conflicting opinions of the advocates of the practice and its opponents.

There are two leading features as to the nature of hypnosis, held by the two leading schools of hypnotism. That of the Salpêtrière, enunciated by the eminent physician, Charcot, is, that hypnotism is pathological, and, in fact, a form of hysteria, and occurs in hysterical subjects only; while the Nancy school contends that hypnosis is a physiological condition analogous to natural sleep, and that nearly all persons of sane mind can be hypnotized.

Much credit is due to Charcot for his researches into hypnotism at a time when the subject was held in contempt or abhorrence; but it is to be deplored that he and his followers, by experimenting mainly on hysterical subjects—for the most part women—have forced us to regard their experiments as incomplete, and the arguments based upon them as futile. As agricultural laborers, sailors, soldiers, and the majority of children are shown to be exceptionally susceptible to hypnotism, we must, if we accept Charcot's dictum, very greatly enlarge our views as to the prevalence of hysteria; indeed, we shall be forced to assume that one-half at least of humanity are victims of this form of nervous derangement.

The fact is, that there are two kinds of hypnotism: "le grand" and "le petit." The former, which has been so developed by cultivation at the Salpêtrière as almost to constitute a new nervous disease, is undoubtedly to be seen in comparatively few subjects, which few are always of pronounced hysterical type; but the latter, "le petit hypnotisme," which is employed by Bernheim and by all physicians practising the Nancy method, is a condition of very constant occurrence. Many persons, and even some men of science, seem to imagine that by hypnotism is meant the

<sup>1</sup> Abstract of a paper by Charles Lloyd Tuckey, M.D., in The Contemporary Beview for November production of such a state of unconsciousness and automatism as is seen in the subjects at the Salpêtrière, or on public platforms. But Bernheim's definition covers a much wider field. "Hypnotism," he says, "is the induction of a psychical condition in which the subject's susceptibility to suggestion and ability to act upon it are enormously increased."

Suggestion is the key to the hypnotic problem. By it the subject is put to sleep or calmed into a state of receptive quiescence, and by it he is guided in the way of cure. The degree of suggestibility is not necessarily proportioned to the depth of sleep. Some persons are barely hypnotizable, and yet a suggestion will take possession of their mind and dominate their actions; while others, even in the most profound hypnotic sleep, will refuse to receive or to act upon suggestion. As an illustration of great suggestibility accompanying a slight degree of hypnosis, I may refer to a case that has come under my own notice. The patient, whom I may call Dr. A., a university professor and a member of several learned societies, was an inveterate smoker, and hardly to be found without a cigarette in his mouth, except when he was eating or sleeping. As he was a man of highly irritable and nervous temperament and suffered from sleeplessness and atonic dyspepsia, such excessive smoking was the very worst thing for him. He knew well, and had been told by several medical men, that the habit was undermining his health and ruining his nerves, yet he found himself absolutely unable to give it up. I hypnotized him, and he fell into a state of languor resembling sleep, but without loss of consciousness. I then suggested to him that he should no longer have any desire for tobacco, and that he should feel much better for leaving it off. After a few minutes I aroused him, and found that he had a perfect recollection of every word I had said to him; but he remarked that previously, when his physicians had assured him that tobacco was poison to him and had advised him to give it up, he had mentally resented their assertions and their counsel, while now, under the influence of hypnotism, he felt that the words I had spoken were so convincing that it would be impossible to go against them. As a matter of fact, he at once gave up smoking, and I hear from him that he has felt no inclination to resume the habit. He was hypnotized only three times, and it is now eighteen months since he underwent the treatment. Still, frequently though such cases may occur in practice, we may take it as a general rule that the deeper the hypnotic effect, the greater is the influence of suggestion.

Suggestibility apart from hypnotism comes within the experience of us all. Every one has some portion of such susceptibility, and in many it is very highly developed, and may be worked upon for good or evil with signal effect. The drunkard, converted by a Gough or a Father Mathew, is redeemed through suggestion; and through it the victim of evil example or evil solicitation falls to his ruin. We are physically benefited by it when words of hope and cheerful surroundings lead us to forget bodily pain or to entertain the idea of its removal, or even to make the effort required for self-cure — as when a sufferer from functional paralysis is induced, by kindly encouragement, to move the affected On the other hand, suggestion may, and continually does, work physical harm, as when some unwise sympathizer or some meddling Cassandra utters prognostications of sickness and trouble, which, by reason of the depression they induce, are likely to undermine the health of a nervous hearer.

Those ills which the hypnotist can cure by suggestion, he can also frequently produce by the same method. As he can suggest the disappearance of pain, as in some forms of paralysis he can bid the return of strength and suppleness to the heavy, powerless limb, so he can induce the suffering and the impotence of disease. If, during the hypnotic trance, I tell my friend Dr. C. that on awakening he will find one leg paralyzed and feel rheumatic pains in his shoulder, the suggestion is certain to be carried out; and he drags his leg, and complains of twinges in his shoulder, until I assure him that he is cured. But Dr. C. is remarkably susceptible to hypnotism. Fortunately, a subject must generally fall into a profound sleep before he consents to receive disagreeable suggestions; whereas a slight degree of hypnosis will, in most cases, be a sufficient vehicle for those that are beneficial. I have seen the very painful and obstinate neuralgia left after "shingles" entirely and permanently removed in a few minutes by suggestion. The patient, a sailor, was very slightly influenced by hypnotism, but was extremely "suggestible."

Bernheim maintains that natural sleep is the result of auto-suggestion: we lie down in the accustomed place, at the usual hour, in the expectation of sleep, and it generally comes. He maintains also that hypnotic and natural sleep are essentially identical. While agreeing with him that there is a great similarity between the states; that natural sleep is often of the hypnotic type—for instance, the dreamless sleep of childhood;—that hypnotic sleep may frequently be used as a perfect substitute for natural sleep,—into which, indeed, it often passes,—I still believe that the two states differ from each other in several essential points.

The theory that hypnotism, when used in the treatment of moral cases, subverts free will, is erroneous. The originally healthy and well disposed subject, who has sunk into habits of injurious self-indulgence through temptation from surroundings, exhaustion from overwork, anxiety, or some other cause outside himself, has for the time being lost his freedom of will, while the victim of an hereditary taint or congenital deficiency, who is naturally weak or vicious, or strong only in the direction of vice, may be said never to have possessed it. To the former, hypnotic suggestion will very probably restore his power of will; in the latter, the treatment may possibly develop it, especially if he be yet young, and time and patience be given to the task.

Regarding the capacity to hypnotize: no special gift seems required, though one operator may succeed in a case where another has failed. The secret of success here is the same as in other methods of medical practice, and lies in knowing when to apply the remedy, and how to gain the confidence of the patient. Several medical men of my acquaintance are easily hypnotized, but this does not prevent them from successfully hypnotizing others, any more than having been anæsthetized by chloroform oneself prevents one administering it to a patient.

The question of applying hypnotism to children, as a means of moral reformation, is a very serious one. Many people say that they would rather have their children naturally bad than hypnotically good; and I confess to feeling much sympathy with the sentiment, if the badness is within normal limits.

Voisin reports cases of older people who have been reformed by hypnotic suggestion, including some of the worst type of Parisian women, on whom other means of conversion had been vainly tried. Many of these cures, he says, have proved permanent; but my own experience leads me to fear

that in such extreme cases a fresh temptation—a stronger suggestion to evil—generally causes a relapse.

Those physicians who advocate the use of hypnotism advise it, not as a specialty, but as an auxiliary, an adjunct to the practice of every medical man. It is found remarkably effective for the alleviation of pain, even in cases of incurable organic disease, such as cancer, heart disease, and locomotor ataxy; and for the relief of sleeplessness, prostration from overwork of mind or body, hysterical suffering, and such disturbances of nutrition as accompany anæmia and phthisis.

The dangers arising from the popularization of hypnotism have, I think, been overrated, though, as I have said, there is no denying that they exist, and that precautions should be taken against them. The two opposing schools of Paris and Nancy have at least one point in common: they both insist on the necessity of ordering and limiting the practice of hypnotism.

One of the most striking warnings on record against the abuse of hypnotic experiments is the story of Ilma Szandor, which Dr. von Krafft Ebing has given at length in a small volume. This young girl, a Hungarian by birth, was of hysterical constitution, and proved extraordinarily susceptible to hypnotic suggestion. She fell into the hands of persons whose ill-judged zeal and curiosity carried them to lengths which seem almost incredible, and her life was ruined by cruel and senseless experiments. She was hypnotized several times a day for some months, apparently by any one who chose to practise upon her, and was made the victim of very painful and distressing suggestions. For instance, a pair of scissors was on one occasion laid upon her bare arm, and she was told that they were red hot, and would burn her. All the effects of a severe burn were brought about by this suggestion; an inflamed and blistered spot, taking the shape of the scissors, appeared on her arm, and took months to heal. The unhappy girl at last became insane, and, I believe, still remains so.

Professor Pitres mentions several cases where the excessive and misapplied use of hypnotism, accompanied by injurious suggestions, has been followed by grave attacks of neurasthenia; and in my own practice I have met with instances where amateur hypnotism has led to violent attacks of hysteria, followed by delusions. I have found it necessary to exercise great caution in hypnotizing hysterical and neurotic subjects. When I first began to use this treatment I wished to determine some points of interest, and for this purpose I frequently hypnotized two good subjects, one a strong, active-minded woman, the other a very muscular and robust young officer, whom I had cured of alcoholism. After a few weeks the woman began to complain of continual weariness, and of occasionally feeling dazed and confused; and the young man invariably suffered from headache if I hypnotized him more than once in the twenty-four hours, or if I made suggestions of an unpleasant or irritating character. On perceiving this I gave up experimenting on those subjects, and the unpleasant symptoms passed off in a few days. But at the time I formed the opinion, which subsequent events have strengthened, that hypnotism is not such a perfectly harmless thing as some would make it out to be, and that the hypnotic state should never be induced except under trustworthy advice, for a definite beneficial object, and by a responsible operator. If sound-minded and healthy persons suffer from being hypnotized too frequently though every care is exercised in the operation, how much greater suffering and risk must be incurred when the subjects are probably

delicate and neurotic, when the hypnosis is brought about by faulty processes, and the suggestions made are almost invariably of a painful or sensational kind. Many of the subjects used for exhibition are hypnotized twice a day for months, and in consequence of this frequent repetition become reduced to a condition of automatism, vacuity, and dependence on the will of the operator, which it is painful to contemplate. The subjects chosen by public hypnotists are nearly always of a low type of intelligence, and are generally "weedy" and deficient in physical stamina. A few weeks of exhibition will probably render such subjects unfit for any subsequent employment requiring application or reasoning power.

As one of the earliest among English physicians to study the Nancy method of treatment by hypnotism, I feel it my duty to speak very plainly of the dangers attending the ignorant and injudicious use of this powerful agent. the more impelled to do so, because the cause of medical hypnotism has suffered through the confusion existing in the popular mind between it and the hypnotism of shows and entertainments. When people assert that hypnotism is essentially dangerous, and that its employment should be made illegal, it is as well to inquire what variety of hypnotism is referred to. If the speaker has in mind either amateur experiments or public performances, any hearer who has studied the subject must heartily endorse what he has said; but if, as is sometimes the case, no discrimination is used, and therapeutic hypnotism shares the general condemnation, we should ask, in the first place, whether it has been proved a dangerous agent in the hands of experienced medical men, and, in the second, whether its benefits are such as to justify the incurring of any risk.

In the hands of a conscientious and experienced physician the use of hypnotism is, I believe, absolutely devoid of danger. This is my own experience; and last year I wrote to the chief exponents of the treatment on the Continent, in America, and in Great Britain and Ireland, asking them for their opinion on this subject. They all replied that they had never met with untoward results, and that they could not conceive the possibility of such results if proper care and judgment were used. The venerable pioneer of suggestive hypnotism, Dr. Liébeault, who has practised for over thirty years among the poor of Nancy, gives the result of his experience in an extremely candid and interesting paper. In this he tells of two or three slight contretemps which happened to him in his early days of inexperience, but he goes on to say that he has never seen any serious accident occur through the use of hypnotism, and records his conviction that harm can result only through faulty method, or ignorance on the part of the operator. The fact that Dr. Liébeault has practised hypnotism so long in a comparatively small town, and that Professor Bernheim has, during the last five years, hypnotized a large proportion of the patients who have passed through the Nancy General Hospital without having any evil results to register, is, I think, a strong proof of the safety of this treatment. But even though hypnotism were proved to be attended by a certain amount of risk, we should hardly be justified in altogether prohibiting or abstaining from its use, if at the same time we could show that its advantages exceeded its drawbacks, and that it enabled us to treat successfully some diseases and conditions which resist other measures.

Among such intractable diseases, alcoholism takes a foremost place. The value of hypnotism in treating this malady may be better understood by the reader if I refer to one or two examples drawn from my own experience. Among the patients who came under my care about the end of 1888 was a successful and prosperous merchant, a member of a neurotic and alcoholized family. He had been addicted to alcohol for about three years, but drank only at intervals, between which he entirely abstained from stimulants and worked steadily at his business. When the alcoholic mania seized him he would surreptitiously leave his wife and family, and go into a mean lodging, where he could drink night and day without hindrance. His family would spend days in seeking him, and he would generally be found sleeping off the effects of a debauch. As time went on the attacks became more frequent, and between the last two only a fortnight had elapsed. He was placed under supervision and treated daily by hypnotic suggestion for about three weeks, but he was only slightly influenced by hypnotism, and always retained full consciousness. He returned home, and had no relapse for seven months, throughout which time he worked hard and regularly. In the summer of 1889 he travelled in Scotland on business, and during this journey the double shock of a thorough wetting and some bad news from home had such an effect on him that he took to whisky. He drank heavily for one day, but he was able to pull up of his own accord, and during the following week he came to see me, and to have the anti-alcoholic suggestions repeated. Since then he has continued absolutely sober, and that without any further treatment. To show the immense power wielded by hypnotism, I shall quote the case of the manager of an important company, who was on the point of being dismissed from his post when he first consulted me, early in this year. This gentleman was very susceptible to hypnotism; he fell at once into a profound sleep, and proved one of the best subjects I have ever seen. As he belonged to an alcoholized family, it was necessary to forbid him all use of stimulants; therefore he was told, while in the hypnotic state, that alcohol was poison to him, and that the taste of it would in future make him violently ill. To test the efficacy of this suggestion, a small glass of beer was given to him during the hypnotic sleep, and another about half an hour after his awaking; on both occasions the dose instantly brought on an attack of sickness, though the patient had no consciousness of the suggestions he had received. He returned to his home and business after about two months, and has had no relapse. A few weeks ago, I had a letter from his mother, informing me that he was very ill with pleurisy. The attack came on suddenly while he was attending a cricket match, and as he complained of violent pain and faintness, a well-meaning friend made him take the usual rough and-ready remedya glass of whisky. He had hardly swallowed the spirit when he again rejected it, thus affording a proof of the continued action of suggession after the lapse of three months, and under altogether exceptional circumstances.

Alcoholism is by no means the only disease originating in bad habits and want of self-control. Morphinism, for example, and the "tobacco habit," have also their victims, and the suggestive treatment which has been found useful in alcoholism has also proved efficacious against those kindred evils.

In a large proportion of cases, hypnotism should be used as an adjunct to other remedial measures, and by no means to their exclusion. And in cases of incurable disease it can be only palliative and directed to the relief of distressing symptoms, such as pain, sleeplessness, want of appetite, and mental depression. By hypnotic suggestion we can often reduce symptoms to their "anatomical expression," and take

the sting from disease. Bernheim, when taunted with unwisdom because he employed hypnotism in the treatment of consumptive patients, and asked if by suggestion he expected to cure the disease and destroy the bacilli of tubercle, replied that he hypnotized those patients, not with the expectation of restoring disintegrated lung tissue, but because his suggestions relieved the wearing cough, reduced perspiration, improved the appetite, and gave refreshing sleep. If the disease was far advanced, suggestion by relieving the symptoms which constituted its sting enabled the poor sufferers to enjoy some comfort during the short spell of life remaining to them. If it had not passed the early stages there was a possibility that, by placing the patient under favorable bodily and mental conditions, reaction towards cure might be initiated and assisted.

After all, is it not the aim of most medical treatment to be thus Nature's auxiliary? The physician can aspire to do little more than place his patient in the most favorable position for cure, and thus aid that restitutio ad integrum which is the natural and vital reaction towards health. writers object to hypnotism for the reason that it removes pain without curing the disease of which it is a symptom, and aver that pain is Nature's danger signal, which should not be lowered unless the cause of danger is removed. Their objection carries little weight when hypnotism is employed by experienced physicians, who know how to interpret the signal, and who, while they try to dispel pain, do not neglect to combat the disease which it betokens. And we must not forget that in certain cases - for instance, in many forms of neuralgia — the pain is the disease, and its removal means the recovery of the patient; nor that pain is often the most distressing accompaniment of incurable disease. How can we let the poor victim of cancer or of locomotor ataxy drag out months or years of agony, when we have at hand the means of mitigating his sufferings? For such a one, the physician can often effect by hypnotism what otherwise he could effect only by narcotics and sedatives; and with this advantage, that hypnotism does not impair the mental and physical powers nor weaken the moral sense, as such drugs must do if their use be persisted in.

An objection frequently urged against hypnotism is that a person who has been subjected to it, even only once or twice, becomes over-susceptible to hypnotic influence. Repetition of the hypnotic process does generally increase susceptibility, though not to the extent which is often supposed. I have frequently seen a practised hypnotist fail absolutely to affect a subject who had many times before been under hypnotic influence. It should be the object of a medical hypnotist not to weaken but to strengthen his patient's will-power, and to make him understand that - to quote Bernheim's wordshe hypnotizes himself under the guidance of the operator. It is a good plan to protect young and very susceptible subjects by impressing upon them during hypnosis that they are not to be hypnotized by any one except their own physician. I have seen sensitive persons who were thus protected resist all the efforts of the most successful hypnotists. It is hardly necessary to insist on the advisability of never hypnotizing women, nor, as a rule, very young persons, except in the presence of a responsible guardian or friend.

#### LETTERS TO THE EDITOR.

 $st_st$  Correspondents are requested to be as brief as possible. The writer's name

on request in advance, one hundred copies of the number containing his communication will be furnished free to any correspondent.

The editor will be glad to publish any queries consonant with the character of the journal.

#### A Suggestion on Telepathy.

MANY persons, when in some public place, as a street-car, church, or theatre, have felt the peculiarly unpleasant sensation that some one is staring at them from behind. Some claim to be able to make certain persons of their acquaintance look around by simply gazing fixedly at them. I am assured by one that at any public gathering she is able, without fail, to make a very selfconscious and sensitive friend look around in an annoyed manner when stared at from behind and entirely out of the range of the friend's vision. One person in seeming physical isolation appears to control another at some little distance. Such cases seem not uncommon, and scientific investigation of them might throw some light on certain cases of telepathy and hypnotism.

Some people also claim to be immediately aware of the presence of certain individuals - to have a physical intuition wholly without sense impression. This is doubtless generally due to an interpretation, unconsciously made, of various sensations which are not welded into ego experience, and so escape memory. Yet sometimes the physical break seems so complete that any sensation seems impossible, and the feeling of presence appears to be a true telepathy. Of one thing I am convinced, namely, that we must first study all instances of what may be termed short distance telepathy before we can expect to make much progress with long-distance telepathy. HIRAM M. STANLEY.

Lake Forest University, Dec. 2.

#### AMONG THE PUBLISHERS.

In the December number of Babyhood there are medical articles on "Biliousness in Children," "Nursery Ventilation and Warming," and "The Care of Delicate Children."

- The New York Mathematical Society has begun the publication of a monthly bulletin. Three numbers, for October, Novemher, and December, have already appeared. The address of the society is 41 East Forty-ninth Street, New York.
- The Review of Reviews will issue about the middle of December a brochure that is sure to create a sensation. It is nothing less than a compilation of anecdotes and materials upon apparitions and ghostly hallucinations, prepared by Mr. Stead, the English editor, and issued with the assistance and approbation of the British and American societies for psychical research, of which Professor Sidgwich of Cambridge University, England, and Professor James of Harvard University are in their respective countries the guiding spirits.
- "Jerusalem, the Holy City," is the title of Mrs. Oliphant's new book which Messrs. Macmillan & Co. are to publish early in December, uniform in style with "The Makers of Florence," "Royal Edinburgh," etc., by the same author. It will be illustrated by Hamilton Aidë. The same firm will soon publish in this country "In Cairo," by William Morton Fullerton. The author formerly occupied the position of literary editor of the Boston Advertiser. For several years past he has lived abroad, and the book to be published embodies the result of a winter's sojourn in Egypt. It will be illustrated with drawings by Percy Anderson, the English artist, who was Mr. Fullerton's fellow-traveller in Egypt and Greece. A book of researches in the Peloponnesus, which Mr. Fullerton explored on donkey-back, will soon follow.
- The December number of the Educational Review completes the second volume of that journal. President Seth Low of Columbia has a suggestive paper on James Russell Lowell as an educator; Principal W.C. Collar of the Roxbury, Mass., Latin School studies the action of the colleges on the schools; Professor Joseph Jastrow contributes a psychological study of memory and association; while Dr. D. A. Sargent of Harvard discusses the subject of college

<sup>&</sup>quot;RECENT Tendencies in the Reform of Land Tenure" is the title of a pamphlet lately published by the American Academy of Political and social Science. The author is Professor E. P. Cheney of the University of Pennsylvania, who has written several other essays on the land question.